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BETTER NUTRITION FOR OLDER PEOPLE

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A nation-wide awakening to the need for better nutrition should not be interpreted as meaning that nutritionists have been asleep for the past twenty years or more. This new interest merely makes possible a new emphasis. Better child nutrition and the control of communicable diseases have reduced mortality. The end result is that more children live to grow up and become numbered among the middle aged. With an increasing population of people over 50 years of age, America is realizing that the older people deserve more attention.

Food Needs of Adults

The need for proper nutrition for the maintenance of optimum health in adults is not as spectacular as the requirements for growth. These delicate organs of ours have been doing their respective jobs for 40, 50, or 60 years. We do not expect a man-made machine to last that long without special care. Nature has a remarkable ability to repair and compensate for worn out or disabled parts if given a chance and the right materials. It is not surprising that this complex human machine of ours gets out of order; the wonder is that it does not do so more often when we give it so little intelligent care.

Research on the nutritional requirements of middle and old age is limited. We may not know all of the materials needed to keep organs functioning at maximum efficiency. But we do know enough to keep people well and active longer if in general they could be induced to apply these facts. Many of the so-called signs of senility are not inevitable but are the results of long-standing moderate deficiencies never severe enough to cause recognized disease.

It is often said that we are as old as we feel. There is more truth than fiction in this. The aches and pains and lethargy of old age do not develop suddenly. The state of nutrition and care of health during middle age sets the stage for the vitality or lack of it later. Middle-aged men and women carry a major share of the responsibilities and worries of the world. It is not physical exertion but nervous strain that more often makes them break.

As physical activity is reduced with advancing age the caloric needs are also less, but the need for protective foods is not less; it may be even greater. Nervous energy requires more vitamins than calories. An excess reserve of body fat is a handicap. But a reserve of protective factors is the best way known of keeping the human body resistant to fatigue and infections.

Vitamin B_1 Important

One of the food factors most needed and most apt to be low in the average American diet is vitamin B_1 or thiamine. The recent awakening to an increased need for this factor has resulted from a wealth of scientific evidence. Clinicians report favorable results from the use of thiamine in a variety of minor ailments. Foods as consumed two generations ago provided more of this factor; the need was probably met without effort although vitamins were unknown. Today it requires care and knowledge of food values to provide a generous amount of vitamin B_1 from natural foods.

There is evidence also that the ascorbic acid (vitamin C) requirement may be more in older people, especially if they happen to have a chronic infection of some kind.

Doctor Mitchell

Not uncommonly older people have poor appetites and live on a limited variety of foods because it requires less exertion, in marketing and meal preparation. Malnutrition is not limited to the families who cannot afford the right kind of food. Malnutrition may appear in any family where habit and tradition alone are allowed to govern food habits. The science of nutrition has advanced the concept of health from the old one of mere freedom from disease to a new one of optimum health, a longer period of active life and healthful longevity. An increased consumption of milk, eggs, fruits, and vegetables will supply the needed vitamins, minerals, and good quality protein. In the present emergency the United States needs the highest state of physical fitness and nervous stability in her citizens.

Glances AT NUTRITION RESEARCH

Improved nutrition for the entire population is essential to national defense. Nutrition research studies point the way to achievement of this goal; dissemination of nutrition information is the next step.

Value of Butter Fat—Continuing their previous studies (see **Nutrition News**, April 1940, page 15), scientists at the University of Wisconsin are endeavoring to determine what it is in butter fat that produces superior growth in laboratory animals. They have separated the volatile, saturated, and unsaturated fatty acids of butter fat and fed them to rats. Results indicate that the superiority of butter fat is due to fatty acids contained in the saturated fraction of butter fat.

—J. Dairy Sci. XXIII:1205 (Dec.) 1940.

Ascorbic Acid in Milk—The influence of the stage of lactation on the ascorbic acid (vitamin C) content of cow's milk has been investigated. It was found that the ascorbic acid content of the milk rose rapidly during the first two months of lactation and decreased from the second to the eleventh month. Values ranged from 9.84 mg. to 28.23 mg. per liter for individual cows; monthly averages during the first ten months of lactation ranged from 15.68 mg. to 21.49 mg. per liter.

—Am. J. Dis. Child. 60:1025 (Nov.) 1940.

Vitamin Intake — The zones between the merely adequate and the optimal in nutrition are much wider for some factors than for others, according to Dr. Henry C. Sherman. As examples, he cites calories and calcium; we cannot make good use of many more calories than we actually need, but we require about a 200 per cent margin of calcium above the level of minimal need.

Experimental animals fed different levels of vitamin A showed improvement up to about fourfold the minimal level; the vigor of their offspring was benefited by a still further rise in vitamin A value of the diet. Similar evidence is available for riboflavin.

From four to eight times the minimum requirement of vitamin C seems to be necessary for optimal blood concentration of this vitamin.

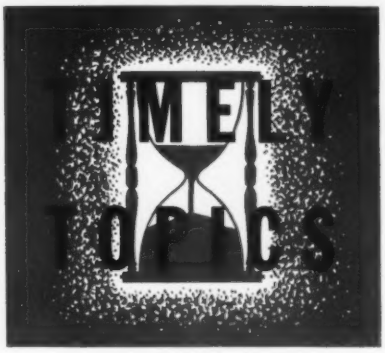
More work is needed on the benefits to be derived from increased thiamine (vitamin B_1) intake. Dr. Sherman believes in continuing nutritional education of the public to the importance of less use of artificially refined foods which do not contain this vitamin.

—J. Am. Diet. Assn. 17:1 (Jan.) 1941.

Vitamin D and Teeth—An important relation appears to exist between the incidence of dental caries and the amount of sunshine and latitude, according to a recent study of the caries rates for children in 358 rural or semi-rural counties of 24 states. A total of 581,708 children were included in the groups studied, about equally divided according to sex.

It was found that the greater the amount of sunshine available at a given location, the lower is the caries rate; also, the more northerly a county, the higher is the caries rate. These results indicate the importance of vitamin D in prevention and control of caries.

—Am. J. Dis. Child. 60:1289 (Dec.) 1940.



An important development in the national defense program is the appointment of a Committee on Food and Nutrition to advise the Federal government on methods of improving the nutrition of the general population. Members of the committee are specialists from various fields of nutrition. They will handle such subjects as the application of nutritional science to everyday diets; establishment of standards by which adequacy of diets may be measured; fortification of staple foods with minerals and vitamins.

Dr. Helen S. Mitchell, author of the leading article in this issue, is on part-time leave of absence from Massachusetts State College, to serve in Washington as a nutrition consultant to the Coordinator of Health, Welfare, and Related Defense Activities. In this capacity she is ex-officio member of the Nutrition Committee described above.

Evidence of the rapid advance of nutrition education is the increase in number of nutrition programs in state health departments. At the beginning of 1941, 32 states (including the District of Columbia, Hawaii, and Puerto Rico) were employing a total of 58 nutritionists, all but three of whom were serving on the staffs of divisions of maternal and child health. In striking contrast is the fact that when funds for this purpose were first made available, only three states were employing nutritionists.

THE CALCIUM REQUIREMENT OF ADULTS

By Dr. Julia Outhouse
Professor of Nutrition
The University of Illinois

In an attempt to determine exactly how much calcium is needed by adult man, three men and four women, ranging in age from 22 to 42 years, were subjected to a calcium metabolism experiment. Their basal dietary, to which vitamin D was added in the form of a fortified halibut liver oil, contained generous amounts of meat, eggs, and fruits, fair quantities of vegetables, and enough cereal products to meet their caloric needs. Each metabolic period was five days in length, a different menu being provided for each of these five days. The experiment was conducted during the months of January, February, and March. The allotment of milk varied; during the basal series only a small amount of coffee cream was allowed; hence, the calcium content of the dietary was very low. During the milk series, pasteurized fluid milk was provided in amounts calculated to bring each subject almost into calcium equilibrium.

Calcium Utilization

The quantity of calcium ingested and excreted during these two series yielded data from which the amount of milk calcium utilized by each subject could be computed. The resulting values ranged from 15 to 35% and averaged 24%.

During the milk period, none of the subjects was in exact calcium equilibrium, although one woman and one man were within 5 mg. of it. The balances of the other subjects ranged from —39 to +24 mg. In order to compute calcium requirement from these balances, each subject's ability to utilize the calcium of milk had to be considered. The necessity for such a consideration is illustrated by the case of the 74 kg. man who, while ingesting daily 873 mg. calcium, exhibited a daily drain from his skeletal tissues of 22 mg. of calcium. In order to be in calcium equilibrium, this man would have had to eat, in addition to 873 mg., not just the 22 mg. which constituted his negative balance but five times that quantity since he could actually utilize only 20% of the calcium he ate. (In other words, his daily requirement was 981 mg. and not 895 mg.

Calcium Requirements

The daily calcium requirement of the other six subjects ranged from 506 to 686 mg.; the average for all seven subjects was 662 mg. Calculated on the basis of weight, the requirements ranged from 8.3 to 13.3 mg. per kg. and averaged 10.7; on the basis of height they ranged from 3.1 to 5.4 mg. per cm. and averaged 3.9. Relating the data to surface area and to the recumbent height multiplied by shoulder breadth resulted in ranges of values which were just as great.

The requirement for calcium as determined in this study represents the minimum amount needed for calcium equilibrium; lesser quantities would have resulted in a drain of calcium from body tissues.

Milk Needed for Calcium

The question arises as to just how adequately the addition to the basal dietary of the one pint of milk commonly recommended for adults would have satisfied the needs of these subjects. Six of them would have had enough calcium not only to maintain calcium equilibrium but also to provide for the storage of some calcium if their skeletal tissues were not fully calcified. The 74 kg. man, however, would have drained calcium from his body at the rate of 32 mg. daily. The data do not indicate how long a period would elapse before such losses would result in the impaired health of this individual.

This study serves to reemphasize the importance of milk for the nutrition of the adult since none of these subjects could have eaten enough non-milk foods to provide for calcium equilibrium.

A NUTRITION PROGRAM FOR YOUNG ADULTS

By Mrs. Elizabeth Riner
Supervisor of Homemaking Education
Omaha Public Schools

In elementary schools, nurses and teachers urge children to eat the foods needed for proper growth and development. In high schools, teachers of home economics and biology, cafeteria managers, and others continue this program for optimum health through correct diet. However, in reality, these children are not the homemakers; and unless the adults in the family realize the importance of nutrition, we have accomplished very little.

Classes in nutrition for young men and women, out of school, are meeting with great success in many districts of our city. A class of young women in our N. Y. A. Homemaking House has been meeting regularly once each week for the preparation of luncheons and a discussion of the importance of foods available to this group. The class meets at 9:45 in the morning. The girls are given mimeographed recipes for the foods to be prepared; and, after an explanation, go into the kitchen and prepare a substantial luncheon for all the girls in the House.

Surplus commodities form the basis of the menu and are supplemented by food purchased with the ten-cent fee which each girl contributes. Milk, fruit, vegetables, and whole-grain cereals are emphasized. Many girls come from homes where these products are neglected. Consequently, recipes planned to use these particular commodities are stressed.

A discussion of nutrition follows each lesson on food preparation and these young women are making changes in their diets which are influencing the nutrition of the entire family. This appreciation for food, we believe, will carry over into their own homes which they are planning to establish in the near future.

A class of 26 young men from 18 to 25 years of age has proved to the Department of Adult Homemaking that men are interested in nutrition. The class was requested by two boys who overheard a discussion in a women's class. They gathered a group of their friends and met regularly for 12 weeks to discuss food in relation to health.

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DID YOU KNOW

—that a glass of milk contains 15 hundred billion fat globules? There are more fat globules in one cc. of milk than there are people living on the earth today.

—that cats can get pellagra from a poor diet, just like dogs and humans? Nicotinic acid cures or prevents the disease.

—that ice cream cones can be filled down to the tip by the use of a new filler? It is a scoop, which is dipped into the ice cream, and the cream comes out as a cone, point downward.

—that the fear of eating too many acid-forming foods is an unfounded idea? Nutritionists say there is no need to worry about acid-forming and base-forming foods if you have a well-rounded diet including plenty of the protective foods.

—that consumption of cheese has increased 36% since 1930? Consumption of American or Cheddar cheese alone has increased 45%.

—that there are at least twelve fractions of the vitamin B complex? Five are available in crystalline form.

—that the milk equivalent of all dairy products consumed per person in the United States in 1939 was 97.9 gallons? This is the highest on record.

—that females seem to be more economical than males in their use of iron? Anemic females retain more iron than anemic males in spite of their smaller body size.

THINGS YOU'LL LIKE TO READ

NUTRITION IN HEALTH AND DISEASE—Cooper, Barber, and Mitchell. J. B. Lippincott Co., 1938. $3.00 (New edition in preparation.)

This text book is designed to meet the needs of those interested in a non-technical discussion of normal nutrition in special and diseased conditions.

VITAMINS: WHAT THEY ARE AND HOW THEY CAN BENEFIT YOU—Henry Borsook. Viking Press, 1940. $2.00.

Dr. Borsook, a member of the National Advisory Committee on Food and Nutrition (see Timely Topics, page 11 of this issue) has popularized the important subject of vitamins in this interesting and informative book.

INTRODUCTORY FOODS—Osee Hughes. Macmillan Co., 1940. $3.00.

Information is given about the purchase, care, and preparation of foods; their nutritional, health, and hygienic aspects; meal planning and serving. Laboratory exercises are included.

DIETETICS SIMPLIFIED—L. J. Bogert and M. T. Porter. Revised edition. Macmillan Co., 1940. $3.00.

Discussion questions and problems have been added to each chapter of this revised reference book. New tables of food values are included, and all nutrition information has been brought up to date.

NEW GOVERNMENT PUBLICATIONS ON NUTRITION AND DEFENSE. "Eat the Right Food to Help Keep You Fit" is the name of a new leaflet available from the Bureau of Home Economics. "The Health of the Child Is the Power of the Nation" is the general subject of a series of leaflets published by the Children's Bureau, U. S. Department of Labor.

A SOUTH AMERICAN NUTRITION PROGRAM

An outstanding example of nutrition work done in South America is that of the National Institute of Nutrition in Buenos Aires, of which Dr. Pedro Escudero is director. With the National School of Dietitians, the Institute superintends the diets of children in the Mitre Kindergarten of Buenos Aires.

The children are between four and six years old and come from poor families. Because of the dietary deficiencies peculiar to the homes of the children, it was considered necessary to take advantage in every possible way of the time the children spent in the kindergarten. It was therefore decided to give them foods furnishing 90% of the calories needed daily, 60% of this amount to be provided by protective foods.

The children are divided into groups according to age and weight, and the quantities of food which they are given vary accordingly. The mineral and vitamin content of the diets is high, and meets the standards set up by the National Institute of Nutrition. For example, enough milk and cheese are included in the diet to provide the children with more than one gram of calcium per day.

A NUTRITION PROGRAM FOR YOUNG ADULTS

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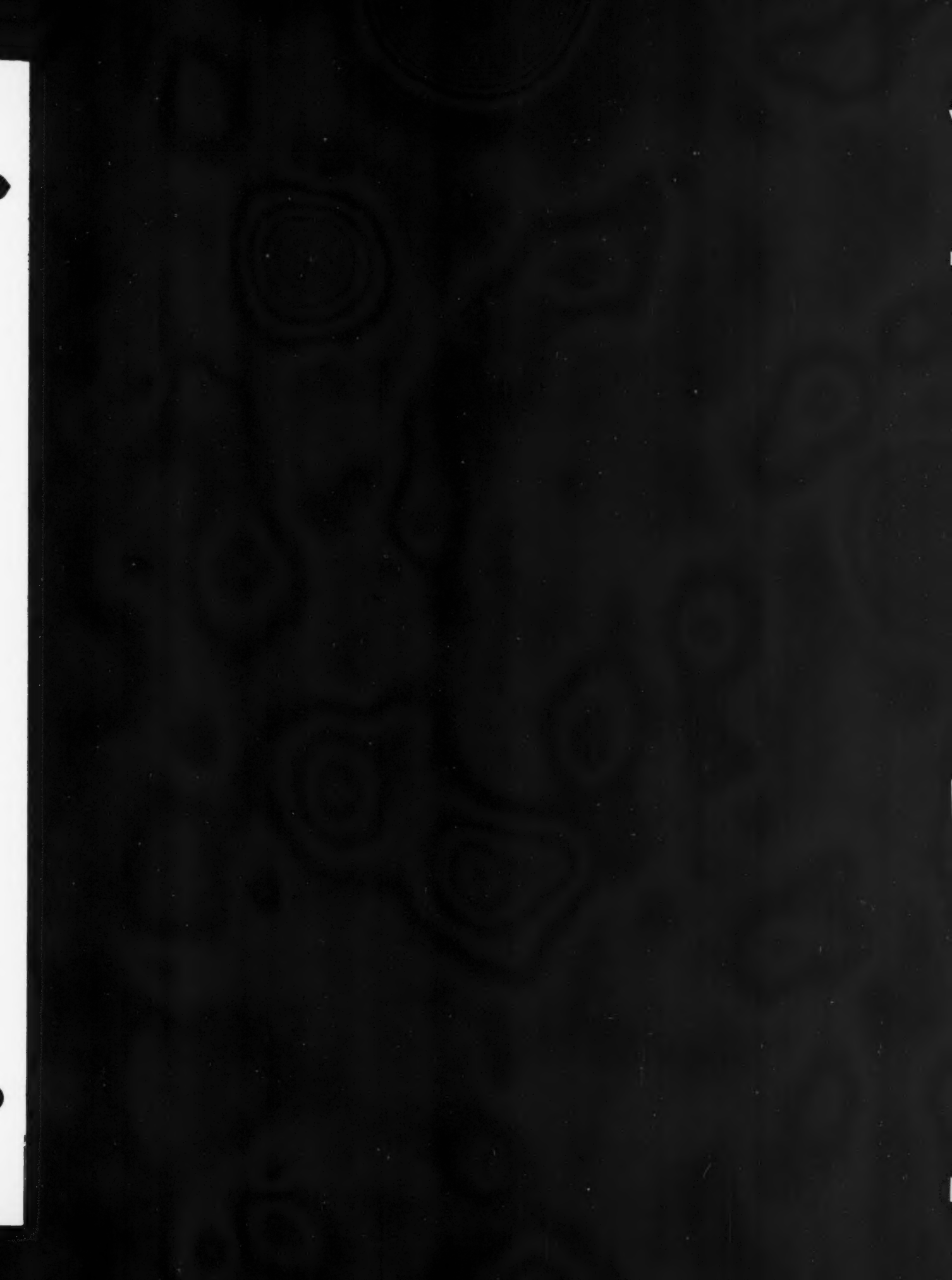
They went home to insist that more milk was available to drink, and that a variety of vegetables be served. They were very conscious of their own dietary needs. We believe their ability to plan for adequate food will be of far-reaching influence.

Supper classes of the Y.W.C.A. are made up of young business and professional women planning to be married. They feel a keen responsibility toward this new job of planning and serving meals and bring a new problem to each class. These young women come in at five o'clock and prepare their dinner which is planned to cover the basic experiences attendant upon meal preparation. While the meal is being served, a discussion of meal planning is carried on. The girls are truly interested in foods important to health.

Of course, there are still some groups who feel that milk, vegetables, and fruits are too expensive to be included in the diet of the low-income family. In one class that feeling was somewhat overcome by a comparative-cost study of the foods which they brought or prepared regularly and those which they had considered too expensive.

Thus, gradually, the young people are learning the part that food plays in the life of the nation.